

ABSTRACT OF THE DISCLOSURE

[0041] An envelope based amplitude mapping achieves the signal compression required to provide a natural sound level without the high processor loading or waveform alteration. In a preferred embodiment, the output of a family of parallel bandpass filters is processed by an envelope detector, followed by decimation. The resulting reduced data rate envelope is log mapped to produce a scaling factor for the original high data rate bandpass filter output sequence. The resulting scaled signal determines the current level for stimulation of the cochlea for each frequency band, which stimulation achieves a log mapping of the sound amplitude effect similar to natural hearing, while reducing processor load, and preserving waveform shape.